In the Claims:

Please amend the claims as follows:

1-41 (cancelled)

42. (currently amended) A high voltage AC transmission cable system for transmitting power between two points each connected to one or more power networks, comprising:

an ~~at least one~~ AC transmission cable having two ends;

two transformers ~~at least one transformer~~ with variable voltage transformation, wherein each of the two transformers is arranged in shunt connection at one of the two ends ~~each end~~ of the ~~at least one~~ AC transmission cable;

two voltage control members, each of which is ~~a voltage control member~~ operatively connected to one of said two transformers ~~the at least one transformer~~ and which are operative to control said two transformers in a coordinated manner to regulate an operating voltage level of said AC transmission cable whereby losses due to reactive power transport are ~~minimize~~ minimized; and

two tap-changers, each of which is ~~at least one tap-changer~~ operatively connected to one of the two voltage control members ~~member~~ and to a corresponding one of said transformers to vary the voltage transformation of the transformer according to said operating voltage.

43. (currently amended) The system according to claim 42, wherein each the voltage control member is operative to operate said system at an optimal voltage dependent on a surge

impedance of the cable and an instantaneous power level.

44. (currently amended) The system according to claim 42, wherein each the voltage control member is operative to operate said system at an optimal voltage dependent on an instantaneous power level equal to a Natural Load of the cable.

45. (currently amended) The system according to claim 42, wherein each the voltage control member is operative to operate said system at a voltage whereby a sum of resistive losses, dielectric losses and charging losses are minimized.

46. (currently amended) The system according to claim 42, wherein each the voltage control member is arranged for communication with control equipment at both ends of said AC transmission cable.

47. (currently amended) The system according to claim 42, wherein each the voltage control member is arranged with control instructions for operation of said AC transmission cable under thermal overload conditions during limited periods of time.

48. (currently amended) The system according to claim 42, wherein ~~the at least one transformer~~ each of the transformers is arranged to operate with a wide ratio of input voltage to output voltage of between 1: 1 to 1: 2, or greater.

49. (cancelled)

50. (currently amended) The system according to claim 42, wherein each the voltage control member comprises a power electronic device which may be any of the list of: IGBT, IGCT, GTO, Thyristor, Diode.

51. (currently amended) The system according to claim 42, wherein each the voltage control member comprises a mechanical tap-changer.

52. (currently amended) The system according to claim 51, wherein ~~the~~ each tap-changer comprises a phase-shifting tap changer.

53. (currently amended) The system according to claim 42, wherein ~~the~~ each voltage control member is comprised in an autotransformer.

54. (currently amended) The system according to claim 42, wherein ~~the~~ each voltage control member is an autotransformer.

55. (currently amended) The system according to claim 42, wherein ~~the at least one~~ each transformer is arranged to limit short-circuit currents.

56. (currently amended) The system according to claim 42, ~~wherein the system is equipped with~~ further comprising:

a high frequency filter.

57. (currently amended) The system according to claim 42, wherein transformer windings of ~~the at least one~~ each transformer comprise at least one transformer winding arranged for a fast short-circuit of a part of the transformer windings.

58. (previously presented) The system according to claim 42, further comprising:

one or more parallel cables for each phase, wherein each cable is arranged for rapid disconnect and reconnect.

59. (previously presented) The system according to claim 58, further comprising:

one or more breakers arranged for rapid disconnect and reconnect.

60. (previously presented) The system according to claim 58, further comprising:

one or more tap changer by-pass connectors.

61. (currently amended) The system according to claim 42, wherein the ~~at least one~~ AC transmission cable ~~comprise~~ comprises an oil and paper insulated cable.

62. (currently amended) The system according to claim 42, wherein the ~~at least one~~ AC transmission cable comprises an XLPE insulated cable.

63. (previously presented) The system according to claim 42, further comprising:

one or more over-voltage protection devices, phase-to-phase, phase-to-earth, depending

on the cable.

64. (currently amended) The system according to claim 42, further comprising:

one or more elements operative to protect a sheath of the ~~at least one~~ AC cable from overvoltage.

65. (previously presented) The system according to claim 42, further comprising:

a cable system shield comprising transposings and sheath sectionalizing insulators reducing shield induced currents.

66. (previously presented) The system according to claim 42, wherein one end of the transmission cable may be connected to one or more electrical machines isolated from the rest of the system.

67. (currently amended) The system according to claim 66, wherein ~~one of~~ the ~~at least one~~ transformer arranged nearest the one or more electrical machines has a fixed transformation ratio or ~~is equipped with~~ comprises off-load tap-changers only.

68. (previously presented) The system according to claim 66, wherein voltage regulation of the one or more electrical machines is controlled according to natural load and minimize losses principle applied to a tap changer.

69. (currently amended) A method to control a high voltage AC transmission cable

system for transmitting power between two points connected to one or more power networks, the method comprising:

arranging ~~at least one transformer~~ two transformers with variable voltage transformation, each transformer being in shunt-connection at ~~each end~~ one of two ends of an AC transmission cable;

controlling said transformers in a coordinated manner to regulate an operating voltage level of said AC transmission cable, whereby losses due to reactive power transport are minimized, wherein said operating voltage may differ from a voltage of said one or more power networks; and

arranging ~~at least one tap-changer~~ two tap-changers, each of which is to vary the voltage transformation of one of said transformers according to said operating voltage.

70. (previously presented) The method according to claim 69, further comprising:

regulating the voltage dependant on a function of a natural load of said AC transmission cable, and thereby controlling a level of reactive power transported into any of said one or more power networks.

71. (previously presented) The method according to claim 70, wherein the voltage is regulated dependent on the natural load, whereby losses at due to resistive, dielectric effects are minimized.

72. (previously presented) The method according to claim 71, wherein the voltage is regulated under no-load conditions such that losses are reduced while maintaining voltage above

a lower, minimum voltage level depending on system conditions.

73. (previously presented) The method according to claim 71, wherein the voltage is regulated under low load conditions such that losses are reduced while maintaining voltage above a lower, minimum voltage level depending on system conditions.

74. (previously amended) The method according to claim 69, further comprising:

regulating the voltage dependent in part on an equation of the form:

$$V = \sqrt{Z_v \cdot P_{actual}}$$

where V is voltage, Zv is the real part of the surge impedance and Pactual is the present active power flow.

75. (previously presented) The method according to claim 69, further comprising:

regulating the voltage dependent on thermal overload limits for the transmission cable during limited periods of time.

76. (currently amended) The method according to claim 69, further comprising:

rapidly reconnecting and disconnecting supply to and from ~~at least two~~ the AC transmission ~~cables~~ cable.

77. (currently amended) The method according to claim 69, further comprising:

regulating the voltage with ~~more than one transformer~~ the two transformers that are operated synchronously with each other.

78. (previously amended) The method according to claim 69, further comprising:

utilizing the high voltage AC transmission cable system as a power feeder for large, densely populated urban or suburban areas.

79. (previously amended) The method according to claim 69, further comprising:

utilizing the high voltage AC transmission cable system for transmitting power over a distance, wherein a part of the distance is across water.

80. (previously amended) The method according to claim 69, further comprising:

utilizing the high voltage AC transmission cable system for transmitting power between two points wherein one point comprises one or more electrical machines isolated from an electrical power network.

81. (previously amended) The system according to claim 42, further comprising:

a high speed data communication member connected to at least one of said transformers for communication with control voltage control member.

82. (previously amended) The system according to claim 42, further comprising:

a graphical user interface comprising at least one object oriented application for presenting data, parameter values and control actions for operating parameters of the AC transmission cable system.

83. (currently amended) A high voltage AC transmission cable system for transmitting power between two points each connected to one or more power networks, the system comprising:

two transformers ~~at least one said transformer~~ with variable voltage transformation, each of which is arranged in shunt connection at ~~each end~~ one of two ends of the AC transmission cable;

two voltage control members, each of which is ~~a voltage control member~~ operatively connected to one of said two transformers and which are operative to control said two transformers in a coordinated manner to regulate an operating voltage level of said AC transmission cable dependent on the surge impedance of the cable whereby losses due to reactive power transport are minimized; and

two tap-changers, each of which is ~~at least one tap-changer~~ operatively connected to one of the two ~~the~~ voltage control members ~~member~~ and to a corresponding one of said two transformers to vary a voltage transformation of the voltage ~~transformer~~ transformers according to said operating voltage.

84. (currently amended) The system according to claim 83, wherein the voltage control ~~member is~~ members are operative to operate said system at an optimal voltage dependent on the surge impedance of the cable and the instantaneous power level.

85. (currently amended) The system according to claim 83, wherein the voltage control ~~member is~~ members are operative to operate said system, at an optimal voltage dependent on an instantaneous power level equal to the Natural Load of the cable.

86. (currently amended) The system according to claim 83, wherein the voltage control ~~member is~~ members are operative to operate said system at a voltage whereby the sum of the resistive losses, dielectric losses and charging losses are minimized.

87. (currently amended) The system according to claim 83, wherein the voltage control ~~member is~~ members are arranged for communication with control equipment at both ends of said AC transmission cable.

88. (currently amended) The system according to claim 83, wherein the voltage control ~~member is~~ members are arranged with control instructions for operation of said AC transmission cable under thermal overload conditions during limited periods of time.

89. (previously presented) The system according to claim 83, further comprising:

a cable system shield comprising transposings and sheath sectionalizing insulators reducing shield induced currents.

90. (previously presented) The system according to claim 83, wherein one end of the transmission cable may be connected to one or more electrical machines isolated from the rest of the system.

91. (currently amended) The system according to claim 90, wherein one of the ~~at least one transformer~~ two transformers arranged nearest the one or more electrical machines has a

fixed transformation ratio or ~~is equipped with~~ comprises off-load tap-changers only.

92. (currently amended) A method to control a high voltage AC transmission cable system for transmitting power between two points connected to one or more power networks, the method comprising:

arranging ~~at least one transformer~~ two transformers with variable voltage transformation, each of the transformers being in shunt-connection at ~~each end~~ one of two ends of an AC transmission cable;

controlling said transformers in a coordinated manner to regulate an operating voltage level of said AC transmission cable dependent on a surge of impedance of the transmission cable, whereby losses due to reactive power transport are minimized, where said operating voltage may differ from a voltage of said one or more power networks; and

arranging ~~at least one tap-changer~~ two tap-changers, each of which is to vary the voltage transformation of one of said transformers according to said operating voltage.

93. (previously presented) The method according to claim 92, further comprising:

regulating the voltage dependant on a function of a natural load of said AC transmission cable, and thereby controlling a level of reactive power transported into any of said one or more power networks.